the Energy to Lead

**QUARTERLY REPORT - *PUBLIC PAGE***

GTI PROJECT NUMBER 20755

# Broadband Electromagnetic Technology

## DOT Prj# 258
## Contract Number: DTPH56-08-T-000024

**Reporting Period:**
1st Project Quarter

**Report Issued (Period Ending):**
November 30, 2008

**Prepared For:**
Mr. Max Kieba
General Engineer
US DOT PHMSA
1200 New Jersey Ave., SE
Washington, DC 20590
202-493-0595
max.kieba@DOT.gov

**Prepared By:**
Gas Technology Institute
Ms. Susan Borenstein
R&D Manager
susan.borenstein@gastechnology.org
847-768-0555

**Gas Technology Institute**
1700 S. Mount Prospect Rd.
Des Plaines, Illinois 60018
www.gastechnology.org

## Legal Notice

*This information was prepared by Gas Technology Institute ("GTI") for DOT/PHMSA (Contract Number: DTPH56-08-T-000024).*

*Neither GTI, the members of GTI, the Sponsor(s), nor any person acting on behalf of any of them:*

*a. Makes any warranty or representation, express or implied with respect to the accuracy, completeness, or usefulness of the information contained in this report, or that the use of any information, apparatus, method, or process disclosed in this report may not infringe privately-owned rights. Inasmuch as this project is experimental in nature, the technical information, results, or conclusions cannot be predicted. Conclusions and analysis of results by GTI represent GTI's opinion based on inferences from measurements and empirical relationships, which inferences and assumptions are not infallible, and with respect to which competent specialists may differ.*

*b. Assumes any liability with respect to the use of, or for any and all damages resulting from the use of, any information, apparatus, method, or process disclosed in this report; any other use of, or reliance on, this report by any third party is at the third party's sole risk.*

*c. The results within this report relate only to the items tested.*

## Results and Conclusions

Broadband electromagnetic technology (BEM) is a direct assessment tool using eddy current. The sensor is capable of measuring wall thickness and cracks in ferrous metal pipes without removing coatings in both traditional and keyhole excavations.

The project goals are to show utilities how to use the BEM, to provide documentation and training on using the BEM, and to provide upgraded enhancements for the BEM system.

GTI held monthly conference calls with Rock Solid Group (RSG) to discuss the list of characteristics required for an enhanced BEM system. GTI gathered pipe samples for validation testing of the BEM system at the GTI facility. RSG completed some initial enhancements and tested the BEM unit with additional components. RSG is also getting the BEM system ready for shipment to GTI.

## Plans for Future Activity

GTI will coordinate the shipment of BEM unit from Rock Solid to GTI scheduled for early December 2008. Once the shipment is received, GTI will review it and perform screening tests to validate its working condition.

GTI will begin laboratory testing of the BEM system on pipes with both machined and naturally occurring flaws. GTI will also identify and evaluate the various components of the full encirclement unit (FEU) and its ability to check pipe diameters of various sizes.

As a follow up to the initial planning meetings, GTI is planning a kickoff meeting with partnering utilities to coordinate future field trials. The field trials will be conducted after laboratory examination of the enhanced unit. The field trials will demonstrate and further evaluate the upgrades to the BEM unit.

Respectfully Submitted,

Ms. Susan W. Borenstein

847-768-0555

***End of Report***